descriptor, the PER 1800000 of FIG. 7 routes traffic to a particular one of several

different networks, e.g., an Intranet VPN 42_1, a voice network 42_2 and the Internet 42_3, in

accordance with the customer descriptor 22' written onto the frame by the MSP

1200000_2.

IN THE CLAIMS:

1   1.   A method for routing at least one frame from one Ethernet protocol

2 network to at least one other network, each network having at least one platform serving

3 at least one customer, associated with a Virtual Local Area Network (VLAN), such that

4 the frame passes from one sending customer associated with a first VLAN served by a

5 first platform to at least one receiving customer associated with a second VLAN served

6 by a second platform, comprising the steps of:

7   (a) receiving at said first platform said one frame from said one sending customer;

8   (b) modifying said one frame with a customer descriptor that identifies said

9 sending customer;

10   (c) using the customer descriptor to map a path from the first platform to the

11 second platform; and

12   (d) routing the frame on the path.

1   2.   The method according to claim 1 wherein the step of using the customer

2 descriptor to map the path includes mapping the customer descriptor to a customer

3 Virtual Private Network (VPN).

1   3.   The method according to claim 1 further including the steps of:

2   providing the customer descriptor with a quality of service indicator that specifies

3 the quality of service level afforded to the frame; and

4   transmitting the frame to the receiving customer with the quality of service level specified

5   by the quality of service indicator provided within the customer descriptor.

1   4.   The method according to claim 1 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to a corresponding

3   one of a plurality of Frame Relay and ATM Permanent Virtual Circuits.

1   5.   The method according to claim 1 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to one of a plurality

3   of Multi-Protocol Label Switching tunnels.

1   6.   The method according to claim 1 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to one of a plurality

3   of different service networks.

1   7.   The method according to claim 1 wherein the step of modifying the frame

2   includes overwriting a Virtual LAN (VLAN) Identifier field within the frame.

1   8.   The method according to claim 1 wherein the step of modifying the frame

2   includes overwriting a source address field within the information frame.

1   9.   The method according to claim 1 wherein the step of modifying the frame

2   includes inserting a shim header containing the customer descriptor.

1   10.   A method for routing at least one frame from one Ethernet protocol

2   network to at least one other network, each network having at least one platform serving

3   at least one customer associated with a Virtual Local Area Network (VLAN), such that

4   the frame passes from one sending customer associated with a first VLAN served by a

5   first platform to at least one receiving customer associated with a second VLAN served

6   by a second platform, comprising the steps of:

7   (a) receiving at said first platform said one frame from said one sending customer,

8   said one frame containing a Virtual LAN (VLAN) identifier field;

9   (b) overwriting VLAN identifier field in said one frame with a customer

10   descriptor that identifies said sending customer;

11   c) using the customer descriptor to map a path from the first platform to the

12   second platform; and

13   (d) routing the frame on the path.

1   11.   The method according to claim 10 wherein the step of using the customer

2   descriptor to map the path includes the step of mapping the customer descriptor to a

3   customer Virtual Private Network (VPN).

1   12   The method according to claim 10 further including the steps of:

2   providing the customer descriptor with a quality of service indicator that specifies

3   the quality of service level afforded to the frame; and

4   transmitting the frame to the receiving customer with the quality of service level specified

5   by the quality of service indicator provided within the customer descriptor.

1   13.   The method according to claim 10 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to a corresponding

3   one of a plurality of Frame Relay and ATM Permanent Virtual Circuits.

1   14.   The method according to claim 10 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to one of a plurality

3   of Multi-Protocol Label Switching tunnels.

1   15.   The method according to claim 10 wherein the step of using the customer

2   descriptor to map the path includes mapping the customer descriptor to one of a plurality

3   of different service networks.

1   16.   An Ethernet protocol network comprising:

2   a fiber ring infrastructure; and

3   a plurality of platforms coupled to the fiber ring infrastructure, each platform

4   serving at least one customer for statistically multiplexing frames onto the fiber ring

5   infrastructure from said one customer and for statistically de-multiplexing frames off the

6   fiber ring infrastructure to the one customer

7   wherein each platform sending a frame overwrites said frame with a customer descriptor

8   that identifies the sending customer; and routes the frame on a path obtained by mapping

9   the customer descriptor to such path.

1   17.   The apparatus according to claim 16 wherein the receiving platform maps

2   the customer descriptor through a provider edge router to a Virtual Private Network

3   (VPN).

1   18.   The apparatus according to claim 16 wherein the customer descriptor

2   includes quality of service level information.

1   19.   The apparatus according to claim 16 wherein the receiving platform maps

2   the customer descriptor through an ATM switch router to a corresponding one of a

3   plurality of Frame Relay and ATM Permanent Virtual Circuits.

1   20.   The apparatus according to claim 16 wherein the receiving platform maps

2   the customer descriptor through a provider edge router to one of a plurality of Multi-

3   Protocol Label Switching tunnels.

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1   21.   The apparatus according to claim 16 wherein the receiving platform maps

2   the customer descriptor through a provider edge router to one of a plurality of different

3   service networks.

1   22.   The apparatus according to claim 16 wherein the sending platform

2   overwrites a Virtual LAN identifier (VLAN) field within the frame with the customer

3   descriptor.

1   23.   The apparatus according to claim 16 wherein the sending platform

2   overwrites a source address field within the information frame with the customer

3   descriptor.

1   24.   The method according to claim 16 wherein the sending platform inserts

2   into the frame a shim header containing the customer descriptor.

1

2   Add Claim 25

3

4   25. In an Ethernet protocol network having a plurality of platforms, with at least a

5   first second platforms serving a group of members, a method of routing at least one frame

6   from at least one sending member of group served by a first platform to at least one

7   receiving member of the served by a second platform, comprising the steps of:

8   (a) receiving at said first platform said at least one frame from said sending

9   member;

10   (b) modifying said one frame with a customer descriptor that identifies said group

11   of members;

12   (c) mapping the customer descriptor to a path in the network between first and

13   second platforms; and

14   (d) routing the frame on the path to the receiving member served by the second

15   platform. -.